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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/643,563

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Wei Li

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05/28/2008

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SAN JOSE, CA 95110-1083

EXAMINER

AHN, SANGWOO

ART UNIT

PAPER NUMBER

2166

MAIL DATE

DELIVERY MODE

05/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/643,563	Applicant(s) LI ET AL.	
	Examiner SANGWOO AHN	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23, 24, 26-29 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23, 24 and 26-29 is/are allowed.
- 6) ☒ Claim(s) 37 and 39 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04022008, 04282008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/14/2008 has been entered.

Response to Amendment

2. Claims 23 – 24, 26 – 29 and 37 – 39 are pending in the present application.
Claims 23, 37 and 38 have been amended.
Claims 1 – 22, 25 and 30 - 36 have been canceled.

Response to Arguments

3. **No response is made to Applicant's arguments with respect to claim 23 since the amendment resulted in allowable subject matter.**
4. **Applicant's arguments with respect to claim 37 have been considered but are not persuasive.**

Applicant mainly argued:

1. Agrawal lacks any teaching or suggestion of considering conditions existing in a computing environment in which the frequent itemset operation is to be performed. Moreover, claim 37 specifies what those conditions include, namely that the conditions include (a) workload of a computer system in which the frequent itemset operation is to be performed, and (b) an amount of volatile memory available to store a candidate prefix tree.

Examiner respectfully traverses for the following reasons:

2. From the Examiner's understanding, the main point of the Applicant's arguments is that the cost estimation in claim 37 is based on I/O cost or conditions existing in the computing environment, which may include workload and resources available on the computer system. First, I/O normally refers to transferring data, so the I/O cost can be interpreted as the cost of transferring data. Second, workload of a computer system and resources available on a computer system are all related to the amount of data and data activity within the system. The cost estimation in Agrawal is based on a number of data characteristics like the number of items, total number of transactions, average length of a transaction, etc. These parameters suggest that the cost estimation is essentially based on how much data is being transferred (number of transactions), workload (number of transactions, average length of transactions) and resources available (the more the number of items or transactions, the less the available resources → also pertains to volatile memory available as the memory is also a resource). The recited conditions on which the cost estimation is based are well known in the data processing art to be the purpose of "cost estimation" within the

computing environment, which is to lessen the workload and to increase the available resources.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 37 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 6,324,533 issued to Rakesh Agrawal et al. (hereinafter “Agrawal”).**

Regarding claim 37, Agrawal discloses,

A method comprising performing a machine-executable operating involving instructions, wherein the machine-executed operation is at least one of:

- A) sending said instructions over transmission media;
- B) receiving said instructions over transmission media;
- C) storing said instructions onto a machine-readable storage medium; and
- D) executing the instructions;

wherein said instructions are instructions which, when executed by one or more processors, cause the performance of a frequent itemset operation by performing the steps of:

dynamically selecting which occurrence counting technique to use from a plurality of available occurrence counting techniques based on conditions existing in a computing environment in which the frequent itemset operation is to be performed (C12:L21-32, et seq.), wherein the conditions include workload of a computer system in which the frequent itemset operation is to be performed, and an amount of volatile memory available to store a candidate prefix tree(C11:L17-33, et seq.); and

during said frequent itemset operation, using said selected occurrence counting technique to count occurrences of at least one combination to determine whether said at least on combination satisfies frequency criteria associated with said frequent itemset operation (C3:L23-24, et seq.).

Regarding claim 39, Agrawal discloses determining that a particular occurrence counting technique will not be considered during any phase of the frequent itemset operation, and performing the frequent itemset operation without performing startup operations for said particular occurrence counting technique (C11:L40-44, et seq.).

Allowable Subject Matter

7. Claims 23 and its dependent claims 24 and 26 – 29 are allowable over prior art.

The closest prior art Agrawal fails to disclose the combination of elements in claim 23, including “wherein generating cost estimates for each of the plurality of

available occurrence counting techniques based on an estimated I/O cost comprises: determining a size of a candidate prefix tree ... generating I/O cost estimate for a prefix tree technique based, at least in part' on the size of the candidate prefix tree and the amount of memory that can be used to store the candidate prefix tree". The above features in conjunction with all other limitations of the dependent and independent claims 23 – 24 and 26 – 29 are allowable.

8. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form **including all of the limitations of the base claim and any intervening claims.**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANGWOO AHN whose telephone number is (571)272-5626. The examiner can normally be reached on M-F 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

5/21/2008
/S. A./
Examiner, Art Unit 2166

/Hosain T Alam/
Supervisory Patent Examiner, Art
Unit 2166